

A NEW *PROTERIADES* WITH DISTRIBUTIONAL NOTES AND A
KEY TO ITS SUBGENUS (*HOPLITINA*)
(HYMENOPTERA: MEGACHILIDAE)

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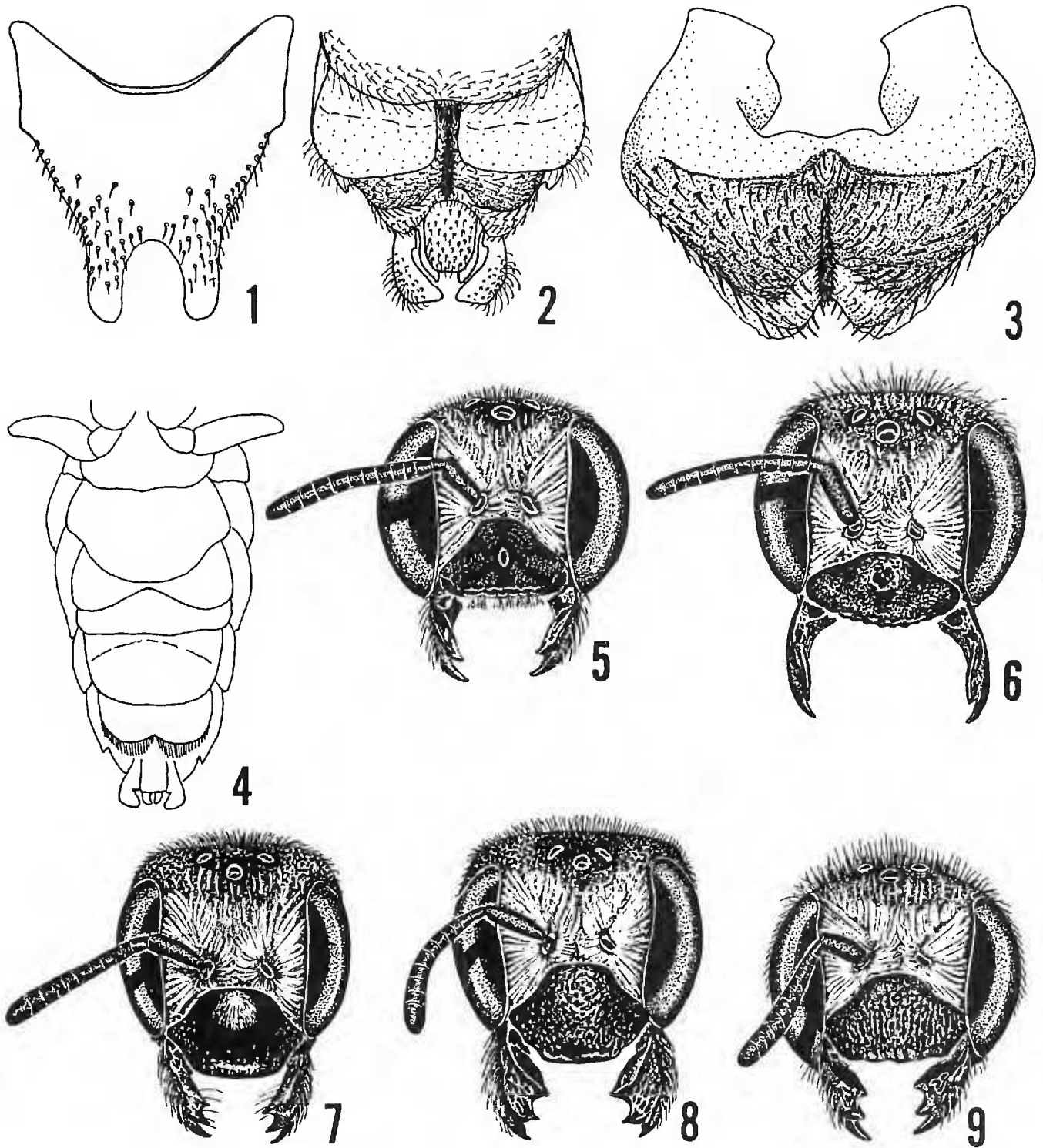
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Proteriades is an interesting genus of small megachilid bees, usually with hooked hairs on the mouthparts. It is believed that females use these hairs to remove pollen from the small corolla tubes of *Cryptantha* flowers (Timberlake and Michener, 1950). Formerly it was believed that the genus was an oligolege of *Cryptantha* and its distribution was mainly California (Hurd and Michener, 1955). Recently the known distribution of several species has been extended east of California (LaBerge, 1973; Tepedino, 1974; and Parker, 1977, 1978), and the concept of its floral constancy has changed to allow for several host families (Parker, 1978).

Recent collecting in our southwestern desert areas has resulted in range extensions for several species previously known only from California. Also, an undescribed species of *Hoplitina* was found. This paper describes the new species, presents a key to the subgenus *Hoplitina* and discusses the distributions of five other species.

***Proteriades (Hoplitina) torchioi*, new species**
(Figs. 1-4, 6)

Holotype male.—Black; reddish laterally on terga 1-4, red area interrupted medially and smaller on successive apical terga; terga 4-6 with apical reddish brown band, sterna 3-4 reddish brown laterally; wings light brown. Pubescence short, white, moderate, longest on frons, vertex; mouthparts without hooked hairs; hair pattern on sterna as follows: 1 with thin fringe of long apical hairs, 2 with few short scattered hairs, 3 with dense short wide hair-pad on median apical margin; 4 with thin apical fringe, 5-6 with thicker apical fringe. Punctuation of body rather uniform, pits small adjacent but separated by smooth integument; clypeus impunctate on summit of basal bulge, and apical margin; less densely punctate on hypostomal area; sternum; hind face of propodeum; propodeal enclosure shagreen; pits on apical margin of sterna less dense; sterna 1, 2 more coarsely pitted than other sterna. Maxillary palpus 5 segmented (on paratype); apical clypeal margin crenulate, slightly thickened, basally swollen, protuberant; scape 3× as long



Figs. 1-9. Fig. 1. Sternum 7 of male *P. torchioi*. Figs. 2-4. Apical sterna of male *P. torchioi*. Fig. 2, enlarged view of apical sterna, genitalia. Fig. 3, sternum 6, note median tufted lobe. Fig. 4, outline of abdominal sterna (segments extended). Figs. 5-9. Front view of faces of *Hoplitina*. Fig. 5, male *P. bunoccephala*. Fig. 6, male *P. torchioi*. Fig. 7, female *P. mojavensis*. Fig. 8, female *P. bullifacies*. Fig. 9, female *P. howardi*.

as wide (flagellomeres missing); supra antennal area flat except near ocular margin; distance between lateral ocelli greater than ocellocular distance ($1\frac{1}{5}\times$); distance from lateral ocelli to margin of vertex same as distance between lateral ocelli; postocciput in outline wider at median than at vertex ($1\frac{1}{2}\times$); coxae neither flanged nor produced; legs normal; sterna as follows

(Figs. 2–4): 1 slightly bowed medioapically, apical margin with small median excision, 2 with apical margin round greatly expanded, covering sterna 3, 4; 3 with apical margin concave, 4 with apical margin slightly angulate, 5 with apical margin slightly incurved, sternum 6 bilobed with median tufted swelling (Fig. 3), 7 elongate with truncate apical margin; terga 1–5 not toothed laterally, tergum 6 with small lateral tooth on apical margin, slightly notched medially; tergum 7 bilobed, space between lateral teeth greater than width of lobe (Fig. 1), (one lobe broken off of type); apical part of genitalia as in Fig. 2; length 7 mm; anterior wing 4.5 mm long.

Female.—As in male except usual sexual differences and clypeus mostly impunctate, margin produced beyond base of mandible, lateral apical margin angulate, truncate medially, corners round, width of truncation equal to distance between antennal scrobes, with depressed subapical pit row, base of clypeus bulbous in side view; frons below median ocellus flat in side view; terga 1–3 red, 4 only laterally; length 6–7 mm; anterior wing 4.5–5 mm long.

Variation.—The paratype male is more extensively red marked, with only median black spots on terga 2–6. Also, the clypeus on this specimen is less punctured (Fig. 6). Females have the same variable red pattern and some have fewer pits on the clypeus.

Types.—Holotype male; ARIZONA: 8 km (5 mi) N Kingman, Mojave Co., III-12-72 (P. Torchio, B. Apperson). Paratypes; 2 males. Walker Pass, Kern Co., Calif. VI-11-62; 6.25 km (10 mi) N Searchlight, Clark Co., Nevada, IV-21-66 (Torchio, Rust, Youssef) *Malacothrix*. Seven females; ARIZONA: 2.5 km (4 mi) W Chloride, Mojave Co., IV-28-72 (P. Torchio, G. Bohart, F. Parker), Oatman, Mojave Co., III-13-72 (P. Torchio, B. Apperson). NEVADA: Montgomery Pass, White Mts., VI-27-52 (S. Tirgari), VI-22-62 (G. Bohart) *Mentzelia*; Alamo, IV-28-73 (F. Parker, P. Torchio). Holotype deposited in the collection at the U.S. National Museum, No. 76201. Paratypes in the collection of the Bee Biology and Systematics Laboratory at Logan, Utah.

Range.—Desert areas of So. California, Nevada, and Arizona.

Systematics.—The male of *P. torchioi* resembles *P. lindsdalei* (Michener) as both species have the long bilobed tergum 7. However, differences in sternal characters readily distinguish them, as stated in the following key. The females of *P. torchioi* resemble those of *P. mojavensis* (Michener), as both species have a shiny, mostly impunctate clypeus. The depressed subapical pit row and the flat supra antennal area of *P. torchioi* distinguish it from *P. mojavensis*. The enlarged sternum 2 of male *P. torchioi* is unique among species of *Hoplitina*. The formation of sterna 2 and 7 closely resembles that found in subgenera with hooked hairs on their mouthparts, such as *Acrosmia* and *Pentariades*. Perhaps the presence or absence of hooked hairs on the mouthparts is an unnatural means of separating subgenera in

Proteriades. The peculiar, raised, tufted lobe of sternum 6 is characteristic of species of *Proteriades*, but its configuration varies among the species.

Biology.—Pollen removed from the scopa of field-collected females was identified as Hydrophyllaceae (*Nama*, *Phacelia*)—65.8%, Asteraceae (*Malacothrix*)—23.5%, and Fabaceae (*Lotus?*)—16.0%. All females had Asteraceae pollens, but three females had most Hydrophyllaceae pollen and two females had mostly Fabaceae pollen.

Key to Species of *Hoplitina*

Males

1. Apical margin of sternum 2 produced into a blunt spine or snout-like projection 2
 Apical margin of sternum 2 round, without median projection 3
2. Clypeus with large keel-like tubercle at base (Fig. 5); tergum 7 truncate apically; mid-coxa not flanged *bunocephala* (Michener)
 Clypeus evenly convex; tergum 7 bilobed as in Fig. 1; mid-coxa with shiny flange *lindsdalei* (Michener)
3. Sternum 1 nearly flat; apical margin of sterna 3–4 strongly concave; vertex without appressed pubescence 4
 Sternum 1 with large bulbous keel; apical margin of sternum 3 fairly straight; vertex with short appressed pubescence
 *bullifacies* (Michener)
4. Apical margin of sternum 2 round, but not covering sterna 3–4; tergum 7 weakly excavated medially or truncate 5
 Apical margin of sternum 2 expanded and covering sterna 3–4; tergum 7 strongly bilobed (Fig. 1), excavated areas wider than lateral arms *torchioi* Parker
5. Tergum 7 truncate apically *mojavensis* (Michener)
 Tergum 7 with small U-shaped excision apically
 *howardi* (Cockerell)

Females

1. Clypeus without keel-like swelling at base 2
 Clypeus with prominent keel-like swelling at base
 *bunocephala* (Michener)
2. Clypeus uniformly punctured or surface shagreen; distance between lateral ocelli $\frac{2}{3}$ distance of ocellocular area 3
 Clypeus mostly impunctate, shiny (Fig. 7); distance between lateral ocelli greater than ocellocular distance 4
3. Clypeus flat, evenly pitted (Fig. 9), vertex without appressed pubescence *howardi* (Michener)

- Clypeus bulbous, surface shagreen (Fig. 8), vertex with appressed pubescence *bullifacies* (Michener)
4. Clypeus with depressed subapical pit row, pits oblong; supra antennal area flat *torchioi* Parker
- Clypeus with few large scattered, evenly formed pits; supra clypeal area swollen *mojavensis* (Michener)

Proteriades (Penteriades) remotula (Cockerell)

A female of this species was collected 23 mi SW Lordsburg, New Mexico on *Cryptantha*. This species was known previously only from California.

Proteriades (Proteriades) deserticola Timberlake and Michener

The range of this species has been extended from California to the following localities in Arizona: 15 mi E Topock; Lake Havasu City, 10 mi S Lake Havasu City; 11 mi N Quartzsite, and 5 mi E Parker.

Proteriades (Proteriades) pygmaea Timberlake and Michener

This species was previously known only from California, but it has been collected at the following locations in Arizona: Oatman (Mojave Co.), 10 mi S Oatman, Lake Havasu City, and 15 mi E Topock.

Proteriades (Xerosmia) xerophila (Cockerell)

The distribution of this black desert species now includes Arizona since I recovered several nests of *P. xerophila* from trap stems placed at 10 mi S Oatman.

Proteriades (Hoplitina) mojavensis (Michener)

The distribution of this species is extended from California to eastern Nevada, as I have reared *P. mojavensis* from trap stems placed at 7 mi NE Ash Springs, Nye Co., Nevada.

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